

MAKERERE



UNIVERSITY

COLLEGE OF HEALTH SCIENCES

**ASSOCIATION BETWEEN ANDROGEN DEPRIVATION AND SERUM INSULIN
LEVELS AMONG UGANDAN MEN WITH ADVANCED PROSTATE CANCER IN
MULAGO HOSPITAL**

BY

DR. LEONARD ODOI, MBChB (MUST)

**A DISSERTATION SUBMITTED TO THE DIRECTORATE OF RESEARCH AND
GRADUATE TRAINING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF MASTER OF MEDICINE IN SURGERY OF
MAKERERE UNIVERSITY KAMPALA**

© 2013

ABSTRACT

Background: In Uganda, cancer of the prostate is now the commonest malignancy in the male, most patients presenting with advanced disease for which the standard treatment remains androgen ablation (ADT), usually by surgical castration. While initially effective in achieving a decline in PSA and clinical improvement, most patients eventually experience recurrence of symptoms, with rising PSA levels despite serum castrate androgen levels. This is termed castrate-resistant prostate cancer (CRPC) and leads to inevitable eventual mortality. Insulin has been implicated in the possible re-activation of the prostatic androgen receptor on the path to CRPC. Furthermore, studies conducted in non-African settings have found that male hypogonadism, such as that following ADT, is accompanied by insulin resistance and consequent hyperinsulinaemia.

Objective: The aim of this study was to establish any association between ADT and serum levels of insulin among Ugandan men with advanced prostate cancer.

Method: It was a comparative analytical cross-sectional study, with patients who had had ADT on one arm (the “ADT group”), while those who were eligible for but had not yet had ADT on the other arm (the “non ADT group”). Venous blood was drawn from all participants after atleast an 8-hour fast and insulin level measured. Data was analyzed using stata 10 using linear regression model, P- value reported, and a significance level of 0.05 used.

Results: There was no evidence for a difference in the serum insulin levels between the two groups, p-value 0.1836. We found a weak negative correlation between time from bilateral orchidectomy and insulin levels ($r = 0.1239$).

Conclusion: This study has found no evidence that ADT by bilateral subcapsular orchidectomy is associated with increased serum insulin levels.